DP-301794

FAST LIGHT-OFF CATALYTIC REFOMER

ABSTRACT OF THE DISCLOSURE

A fast light-off catalytic reformer and method includes at least one preferably substantially cylindrical reactor tube having an inlet for receiving a flow of fuel and a flow of air, a reforming catalyst disposed within the reactor tube for converting the fuel and air to a reformate stream, and an outlet for discharging the produced reformate stream. An ignition device disposed within the reactor tube initiates an exothermic reaction between the fuel and air. Heat generated thereby provides fast light-off of the reforming catalyst. An associated control system selects fuel and air flow delivery rates and operates the ignition device to achieve fast light-off of the reforming catalyst at start-up and to maintain the catalyst at a temperature sufficient to optimize reformate yield. The rapid production of high yields of reformate is particularly suitable for use in an on-board reforming strategy for meeting SULEV emissions with spark-ignition engines, especially with larger, higher emitting vehicles.